Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
NextNav, Inc. Petition for Rulemaking to	)	WT Docket No. 24-240
Amend Part 90 the Commission's Rules to	)	RM-11989
Reconfigure the 902-928 MHz Band	)	
	)	
	)	

To: Marlene H. Dortch, Secretary
Federal Communications Commission

Attn. Joel Taubenblatt, Chief
Wireless Telecommunications Bureau
Ronald Repasi, Chief Engineer
Office of Engineering and Technology

COMMENTS OF GEORGIA STATE ROAD AND TOLL AUTHORITY

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September 5, 2024

The Georgia State Road and Tollway Authority (SRTA), by its attorneys, files Comments in response to the Federal Communication Commission's (Commission) Public Notice (Notice) seeking comment on the Petition for Rulemaking (PR) of NextNav Inc. (NextNav).[1] SRTA is deeply concerned that the NextNav plan, if implemented, would interfere with and disrupt the business of toll collection in Georgia and across the country.[2] For this and other reasons explained herein, SRTA asks the Commission to deny the PR.[3]

As the Notice states, NextNav's April,16, 2024 PR requests that the Commission reconfigure the Lower 900 MHz Band (Band) by creating a 5-megahertz uplink in the 902-907 MHz band paired with a 10-megahertz downlink in the 918-928 MHz band, shifting all the remaining non-M-LMS licensees to the 907-918 MHz portion of the Band. This would enable NextNav to build a terrestrial system (NextGen) to provide positioning, navigation, and timing (PNT) services. The bulk of the spectrum, however, would not be used for PNT. Rather NextNav plans to lease the bulk of the spectrum to a "partner" that would use the spectrum for 5G broadband.[4] The PR makes numerous assertions about current usage on the Band without evidence or input from the many entities that populate it. It further makes unsupported claims and assumptions about its proposed system and the protection of incumbent users. NextNav's outreach to SRTA has been limited. The company has not told SRTA how it would protect its toll collection system or given SRTA any assurances that SRTA could verify.

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[1] Wireless Telecommunications Bureau and Office of Engineering and Technology Seek Comment on NextNav Petition for Rulemaking WT Docket No. 24-240; RM-11989; DA 24-776, released August 6, 2024.

[2] "SRTA is a state-level, independent Authority created by the Georgia General Assembly to operate tolled transportation facilities within Georgia and act as the transportation financing arm for the State. SRTA manages the collection of tolls on Georgia's Express Lanes System through the use of Peach Pass, the state's all-electronic tolling technology." https://srta.ga.gov/

[3] See, Declaration of SRTA Chief Engineer, Annie Gillespie, P.E. (Declaration) attached hereto.

[4] PR at p. 22-23 and n. 76.

As the Declaration states:

> The impact of NextNav's proposal to operate powerful 5G transmitters in the 900 MHz band has not been comprehensively tested. During a May 7, 2004 meeting hosted by the International Bridge, Tunnel, and Turnpike Association (IBTTA) and attended by NextNav, NextNav stated they had performed some preliminary testing with a tolling protocol used by the EZPass Group. However, NextNav did not share who performed the test, the scope and breadth of the test, or any detailed results from the test. At that meeting, NextNav stated they expected to have test results to share within two weeks. To date, SRTA is unaware of any test results shared by NextNav.
>
> To determine the magnitude of the impact of the NextNav proposal, NextNav and the tolling industry would need to complete comprehensive testing with all types of tags in use around the country (including 6C tags and tags using other tolling protocols), using equipment from multiple manufacturers, and including multiple toll gantry configurations. The testing would be multi-phase starting with lab testing, followed by controlled field testing (i.e. at a test track with actual vehicles), and ending with in-lane site testing. It is anticipated it could require up to three years to create test plans acceptable to the consortium of tolling entities in the US, identify and schedule tests with lab facilities required, perform field testing, and validate the results. Testing of this magnitude is expensive and time-intensive – it is not an expense that tolling agencies should be required to carry. (Footnote omitted)

The Notice dissects the PR's various assertions and pointedly requires NextNav to respond with more information to the myriad questions the proposal raises. To the extent NextNav is forthcoming in response to the Notice's request for pertinent and substantive information, SRTA and other users of the Band certainly will have much more to say in reply comments. It will suffice for present purposes to describe SRTA's use of the band, the importance of the toll collection system to Georgia, and the likely harm to these operations the NextNav proposal would cause. SRTA also will comment on procedural flaws in the PR.

In the words of Commissioner Susan Ness, the Commission's 1995 rules for use of the Band, "make permanent spectrum available for electronic tag readers, which are devices that can eliminate the need to stop for toll collection on highways and bridges, and thereby measurably facilitate the flow of traffic."[5] Electronic readers also produce safety benefits for both drivers and toll operators. In 1995 automated electronic toll collection was very limited.[6] These systems have proliferated in this century to the degree that Georgia alone has issued Peach Passes to over 1.1 million vehicles.[7] Currently, the Peach Pass is accepted in 18 states with expected continued interoperability expansion.[8]

NextNav's proposed rearrangement of the Band would risk impeding the flow of traffic and jeopardizing the revenue on which states depend to repay the indebtedness issued to pay for the capital costs of the various roads and for the upkeep of their transportation networks.[9] NextNav's proposal would squeeze the available spectrum from 902-928MHz down to 907-918

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[5] *Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, Report and Order*, 10 FCC Rcd 4695 (1995); Separate Statement of Commissioner Susan Ness.

[6] Id., at 4697. "Non-multilateration systems use narrowband technology to transmit data to and from vehicles passing through a particular location. This technology is now providing valuable services to state and local governments operating various types of automated toll collection systems - with estimated 500,000 cars currently served by such systems… (fn. omitted).

[7] Id., at 4705. "LMS equipment manufacturers, state and local government entities, toll road operators, and Part 15 manufacturers and users require regulatory certainty."

[8] The Fixing America's Surface Transportation Act of 2015 (FAST Act) has accelerated the introduction and improvement of municipal systems that utilize the Band.

[9] As the Declaration makes clear, Toll facilities rely on TIFA loans, municipal bonds and other forms of debt financing to fund capital improvements. These bonds are repaid through toll revenues.

MHz. With less bandwidth available for *all* devices operating in the 902-928 MHz, interference between them will increase – making it difficult to find unused frequencies for plaza locations to read toll tags reliably. Also, as explained in the Declaration, the use of 5G broadband in the Band likely would interfere with the SRTA toll collection system. In addition, the State of Georgia has awarded a Public Private Partnership with a private concessionaire who will also use SRTA's toll tags as a means to collect tolls. If NexNav's request is granted without further testing, the State could owe the private concessionaire a large sum of money if toll collection is impacted. As the Declaration states:

> NextNav proposes to install 5G transmitters that are three orders of magnitude more powerful than any other transmitter currently operating adjacent to the portions of the 900 MHz band allocated for tolling (non-M-LMS monitoring). These transmitters will be communicating with handheld devices (cell phones) in vehicles. The proximity of the 5G handheld devices to the Peach Pass 6C transponder could overwhelm the 6C transponder making it unable to communicate with the roadside tolling equipment regardless of location. This would be a serious disruption to the ability to read vehicle toll tags and collect toll fees.

According to NextNav, as little as 2% of the spectrum would be used to deploy a terrestrial PNT system, while up to 98% would carry 5G broadband services, via leasing arrangements with one or more large 5G providers.[10]

In the section titled *Identification and Protection of Incumbents* the Notice requires NextNav to provide detail and support for its commitment to protect the interests of incumbent users of the Band. SRTA is dubious that any technical rules that NextNav proposes or the Commission might adopt would ensure protection of its toll collection operations. As discussed in the attached Declaration any mitigation that relocates the tolling industry to other portions of the spectrum would be very disruptive and expensive. SRTA believes that commandeering large swaths of the Band for powerful 5G broadband services would obliterate the much weaker signals of non-M-LMS users, such that it would be fruitless to condition any authorization or adopt technical rules.

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[10] NextNav's CEO Mariam Sorond has said that NextNav "envisions its partner building a nationwide 5G network using NextNav's 15MHz chunk of spectrum in the 900MHz band. The partner would use the network for 5G, while NextNav would use it to offer nationwide PNT services. Sorond said NextNav's PNT offerings would consume roughly 2% to 5% of the network's total capacity." https://www.lightreading.com/5g/nextnav-s-ceo-explains-her-5g-network-buildout-plan

The Notice correctly points out that NextNav, despite its claims, is not the only involved party when it comes to PNT networks. The Notice further opines that spectrum other than the lower 900 Band might house a PNT network. It is SRTA's understanding that NextNav's proposed technology is compatible with the existing 5G service operating in the 600MHz and 850MHz portions of the spectrum – allowing them to operate without disrupting the tolling industry and other industries using 6C in the Band.

The terrestrial PNT space has many players and potential approaches and is being worked on by a number of government agencies. The PR is a naked attempt to preempt other systems, other potential providers, and other frequencies than the lower 900 Band in which NextNav has chosen to invest. The Commission must not allow this to happen. If the Commission wants to facilitate the deployment of a terrestrial PNT system, the first step ought to be a notice of inquiry in which industry, government and the public may participate. The Commission would gather valuable input on the type of system and choice of spectrum that would inform an eventual rulemaking proceeding.[11]

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[11] The PR proposes a major rearrangement of the Band's spectrum. The Commission last reviewed its 1995 rules for the Band in a rulemaking it terminated in 2014. If the Commission at some point decides to conduct another review of the Band, it should do so independent of and

NextNav's PNT proposal is an obvious inducement, cloaked in public benefit rhetoric, for the Commission to reconfigure the Band, thereby enabling the company's planned 5G deal. It is questionable whether NextNav even would follow through with its PNT project, which standing alone likely would not be economically feasible.[12] The track record of NextNav and its affiliates suggest a years' long process of delays and waiver requests.[13] Thankfully, the Notice requests business plan data of NextNav. The Notice also recognizes that NextNav would reap a windfall in the event the Commission were to adopt its proposal and seeks comment on how to treat such a transfer of value. The Commission thus implicitly understands NextNav's real goal in this enterprise, the bonanza of a large chunk of spectrum for 5G wireless services.[14]

The Georgia State Road and Tollway Authority respectfully asks the Commission to deny the NextNav Petition for Rulemaking.

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without regard for the NextNav PR. *See, Amendment of the Commission's Part 90 Rules in the 904-909.75 and 919.75-928 MHz Bands, WT Docket No. 06-49*, Notice of Proposed Rulemaking, 21 FCC Rcd 2809 (2006); *In re Amendment of the Commissions Part 90 Rules in the 904-909.75 and 919.75-928 MHz Bands, WT Docket No. 06-49*, 29 FCC Rcd 6361 (2014).

[12] PR, p. 22: "NextNav is proposing a model that can support the incremental capital and operating expenditures required to provide terrestrial PNT based on a 5G broadband deployment, which is the only way to make an extensive, non-federally subsidized network viable to deploy and maintain." NexNav here admits that the PNT system it proposes requires outside funding for its development and operation.

[13] *In the Matter of Progeny LMS, LLC Request for Waiver and Extension of Time; Further Request for Waiver and Extension of Time; Further Waiver Request; Request for Waiver and Extension of Time,* WT Docket No. 12-202; DA 23-265, 38 FCC Rcd 2342 (2023).

[14] Publicly available documents suggest that the NextNav companies are in difficult financial straits. The true purpose of the PR appears to be a grab for lucrative 5G spectrum. Given the high cost of a comprehensive terrestrial PNT system, NextNav needs a substantial revenue infusion from 5G broadband providers in order to pay for NextGen and its other initiatives. *See, e.g., https://www.bleeckerstreetresearch.com/research/nn*

Respectfully submitted,

/s/Arthur V. Belendiuk

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Declaration of Annie Gillespie, PE

I, Annie Gillespie, declare as follows:

I am the Chief Engineer for the Georgia State Road and Tollway Authority (SRTA). The SRTA Office of Engineering oversees tolling infrastructure, including the design, installation, implementation, and testing of the toll systems. I have worked in the transportation industry for over 20 years and the tolling industry for over 10 years.

I have a BS in Civil & Environmental Engineering and an MS in Environmental Engineering from the Georgia Institute of Technology. I am a Registered Professional Engineer in the state of Georgia.

I have been the president of the 6C Coalition since 2020. The 6C Coalition is a collaborative organization composed of toll facility operators/owners that use the International Organization for Standardization ("ISO") 18000-63 (commonly known as "6C") transponders as a primary method for automatic vehicle identification for the purpose of toll revenue collection. The 6C Coalition members represent 49-member tolling entities across the US and Canada.

SRTA currently operates four Express Lanes with over 28 million trips annually. SRTA issues 6C toll transponders, called Peach Passes, to its customers to travel in the Express Lanes in Georgia and other toll facilities on the east coast. The Peach Pass is a small, 6C sticker tag that is affixed to the windshield or headlamp of the vehicle. These stickers identify the vehicle using a passive antenna that communicates through a roadside antenna to a Radio Frequency Identification (RFID) reader when passing under a toll gantry.

6C sticker transponders are simple devices by design, each tag costs less than $1, which allows SRTA to provide the tags to our customers free of charge. SRTA began issuing 6C Peach Pass transponders in 2011 in advance of the opening of the first express lane. At the conclusion of 2011, SRTA had issued 122,517 Peach Passes. Over the next 12+ years, SRTA has opened 3 additional express lanes. Today, there are over 1.1 million active Peach Passes and the number is expected to grow considerably with the expansion of the Express Lanes network in the region. The Peach Pass transponder is now accepted in 18 states.

NextNav, Inc. (NextNav) proposes to reconfigure and to narrow the allowable spectrum available for tolling, without a guard band to protect from interference, by creating a 5-megahertz uplink in the 902-907 MHz band paired with a 10-megahertz downlink in the 918-928 MHz band, squeezing the remaining non multilateration Location and Monitoring Service (non-M-LMS) licensees from 902-928 MHz down to 907-918 MHz. It is expected that a guard band would be required within the remaining 907-918 MHz to avoid interference with the NextNav transmitters, future squeezing the users of the lower 900 MHz band. With significantly less bandwidth available for *all* devices currently operating in the 902-928 MHz, interference between them will increase – making it difficult to find unused frequencies for toll plaza locations to read toll tags reliably.

Further, NextNav proposes to install 5G transmitters that are three orders of magnitude more powerful than any other transmitter currently operating adjacent to the portions of the 900 MHz band allocated for tolling (non-M-LMS monitoring). These transmitters will be communicating with handheld devices (cell phones) in vehicles. The proximity of the 5G handheld devices to the Peach Pass 6C transponder could overwhelm the 6C transponder making it unable to communicate with the roadside tolling equipment regardless of location. This would be a serious disruption to the ability to read vehicle toll tags and collect toll fees.

The impact of NextNav's proposal to operate powerful 5G transmitters in the 900 MHz band has not been comprehensively tested. During a May 7, 2024 meeting hosted by the

International Bridge, Tunnel, and Turnpike Association (IBTTA)[1] and attended by NextNav, NextNav stated they had performed some preliminary testing with a tolling protocol used by the EZPass Group. However, NextNav did not share who performed the test, the scope and breadth of the test, or any detailed results from the test. At that meeting, NextNav stated they expected to have test results to share within two weeks. To date, SRTA is unaware of any test results shared by NextNav.

To determine the magnitude of the impact of the NextNav proposal, NextNav and the tolling industry would need to complete comprehensive testing with all types of tags in use around the country (including 6C tags and tags using other tolling protocols), using equipment from multiple manufacturers, and including multiple toll gantry configurations. The testing would be multi-phase starting with lab testing, followed by controlled field testing (i.e. at a test track with actual vehicles), and ending with in-lane site testing. It is anticipated it could require up to three years to create test plans acceptable to the consortium of tolling entities in the US, identify and schedule tests with lab facilities required, perform field testing, and validate the results. Testing of this magnitude is expensive and time-intensive – it is not an expense that tolling agencies should be required to carry.

SRTA holds a statewide FCC license to operate 6C devices in the 902-928 MHz part of the spectrum – and has devices operating between 911.25 and 920.25 MHz. Today, some toll agencies like SRTA do not operate at the very low end of the tolling spectrum (902-904 MHz) due to concerns of interference with Part 15 devices (e.g. vehicle key fobs) operating adjacent to 902 MHz.

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[1] The (IBTTA) is the worldwide association for the owners and operators of toll facilities and the businesses that serve them. Founded in 1932, IBTTA has members in 23 countries on six continents.

SRTA's devices are tuned to different frequencies on a site-by-site basis to avoid interference with existing RF surveyed at each location. Interference with other licensed and unlicensed operators in the lower 900 MHz band will be compounded when all of the operators are further constrained into 907-918 MHz. As a result, even if NextNav is able to perform controlled tests in coordination with tolling entities and demonstrate that the impacts of their proposal are mitigatable, none of these tests can determine the impact once all of the other devices currently operating in the lower 900 band are concentrated in 907-918 MHz under the NextNav proposal.

Under the NextNav implementation, if interference occurs at an existing toll collection location (toll plaza) and the tolling entity has exhausted all available frequencies, the last resort for mitigation for toll collection in the 900 MHz band would be relocation of the toll plaza. If the NextNav proposal causes unmitigable interference at an existing toll plaza, relocating that toll plaza may not be possible without reconstruction of the roadway or relocation of the physical infrastructure. Assuming there is a location acceptable for relocation, relocation of an existing toll plaza would cost between $1 million and $3 million+ dollars depending on the plaza configuration. SRTA has 74 toll plazas; there are 10,000+ toll plazas across the US that currently operate in the lower 900 MHz band.

Any proposed mitigation that relocates the tolling industry to other portions of the spectrum would be very disruptive and expensive. Again, to move to another part of the spectrum would require multi-year, multi-phase comprehensive testing. If the testing proves successful, all existing RFID equipment would have to be replaced as would every transponder currently affixed to vehicles across the country. This type of migration would require a coordinated effort between all tolling entities, public and private, in the US. Using the migration to the 6C protocol across the country as an indication, this type of migration would take over a decade and require a significant capital investment.

Interference caused by 5G cell phones operating in the 900MHz band could deprive SRTA of the ability to effectively collect tolls. It is SRTA's understanding that NextNav's proposed technology is compatible with the existing 5G service operating in the 600MHz and 850MHz portions of the spectrum – allowing them to operate without disrupting the tolling industry and other industries using 6C in the 900 MHz band.

Disruption to the ability to collect tolls reliably and accurately would have additional financial implications beyond the capital expenditures described above. Toll operators often finance capital improvements paid back through the collection of toll revenues – through Transportation Infrastructure Finance and Innovation Act (TIFIA) loans, issuance of municipal bonds, or other forms of debt. Any interference with SRTA's ability to collect tolls may negatively impact its ability to repay bond indebtedness and could cause an adverse action by credit rating agencies. At the end of the 2023 fiscal year, SRTA had $434.1 million in total outstanding governmental bonded debt and $367.4 million in outstanding business-type bonded debt.[2] Any revenue leakage due to SRTA facilitates being unable to properly read 6C transponders would significantly impact SRTA's ability to service the debt and its long-term credit rating.

I declare under penalty of perjury that, to the best of my knowledge, the forgoing is true and correct.

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[2] https://srta.ga.gov/wp-content/uploads/2024/01/FY2023_SRTA_Financial_Report_FINAL_122723.pdf

Executed on September 4, 2024.

Annie Gillespie, PE